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Zeitgeist Effects, Fragmentation of Media Use, and Value Consensus

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Abstract

Finland changed from an industrial society to an information society in 1991-2015. Due to economic fluctuations, diffusion of digitalization and media turbulence the period changed Finnish society a lot. We studied the impact of this on basic human values with Schwartz's approach, and concentrated on zeitgeist effects. We developed a definition of zeitgeist effects and a set of hypotheses, based on the literature, to study how major societal changes influence values. Also, we found theoretical similarities between value consensus, democratization and the fragmentation of media use that we analyzed. Data (N = 7.172) were collected in five waves. We measured changes in the ten values, and used the two value dimensions based on factor analysis, also. Moreover, we used the Schwartz value map to illustrate value changes in social groups. The combination of the latter two methods offer a parsimonious way to get an overview of value change over a longer period of time, but single values suit better for the analysis of short-term changes. Our hypotheses received support regarding overall change that is small, as well as regarding zeitgeist effects in the 1990s, the disappearance of them in the new millennium, and how the values of social groups started to change in different directions in the era of social media. The above changes including the disappearance of zeitgeist effects in the new millennium were linked to societal events, e.g. fragmentation of media use. Moreover, we found that in a complex society zeitgeist effects might mirror simultaneous impact of several events.

Keywords: age-education groups, democratization, digitalization, fragmentation of media use, societal change, value change, value consensus, Schwartz's value map, zeitgeist effects

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National value surveys showed impressive stability in the USA from 1968 to 1981, but at the same time also a shift from a collective morality value orientation to a personal competence value orientation (Rokeach & Ball-Rokeach, 1989). Similar changes were identified in Finland in two surveys from the 1960s to the 1990s: Firstly, a shift from the emphasis on material security to the emphasis on meaningful work and individualistic self-fulfillment (Suhonen, 1988), and secondly, the continuation of the individualistic trend from 1975 to 1993 (Pohjanheimo, 1996). Also, Greenfield's (2013) analysis based on American English books suggests a similar increase in self-interest from the 1960s onward that corresponds well to the above changes. However, time-related fluctuations are typical of long time series. Greenfield (2013) found several of them in her time series from 1800

to 2000. Schoon (2006) calls time-related changes in values period effects, which describe the influence of historical change if the changes are relatively uniform across successive birth cohorts. When these changes occur only in certain groups, they are defined as generation or cohort effects (Hofstede, 2001; Inglehart, 1981).

Zeitgeist effects refer to a special kind of time-related fluctuations in values that are caused by societal phenomena. The term is particularly used by German philosophers, e.g. Hegel in the study of 19th century romanticism to describe the beliefs and feelings of a certain epoch. At the turn of the 20th century Dilthey argued that the only proper way to understand the 'spirit of the times' (zeitgeist) is to interpret the world views of its participants (Jary & Jary, 1991; Watson & Evans, 1991). Some 50 years later Boring popularized zeitgeist to mean the 'spirit of the times', and the word started to refer the pattern of societal "forces" that push historical events along (Boring, 1950; Watson & Evans, 1991). Hofstede (1980) was the first to link zeitgeist to values, and defines zeitgeist effects as changes in the spirit of the times that occur when drastic system-wide changes in conditions cause everyone's values to shift, regardless of age.

Now zeitgeist effects on values are often referred to as a descriptive or explanatory tool for the observed short-term changes in everyone's values (e.g., Boehnke, Hajdar, & Baier, 2007; Boer & Boehnke, 2016; Hofstede, 2001). Although the concept refers to changes in everyone's values it is often used in a more limited sense, for instance in the analyses of value transmission in families or between adults and children (Boehnke, Hajdar, & Baier, 2007; Vedder, Berry, Sabatier, & Sam, 2009). More recent studies (van der Bles, Postmes, LeKander-Kanis, & Otjes, 2018; van der Bles, Postmes, & Meijer, 2015) conceptualize zeitgeist as a collective global-level evaluation of the state (and future) of society. However, these researchers too limit their analyses to the voting of certain groups, specifically left- or right-wing extremists. Thus, although it is widely accepted that the distinguishing characteristic of a zeitgeist effect is that it occurs simultaneously in the whole of society or in everyone's values during a certain period of time, several exceptions to this rule can be found. A possible reason for this contradiction is that zeitgeist effects have not been analyzed in detail and with national samples, and no systematic theoretical analyses of zeitgeist as a phenomenon, or the ways it changes over time, seem to exist.

Based on the above literature, we defined zeitgeist effects on values as follows. Zeitgeist is a society-wide phenomenon, a holistic manifestation of relevant phenomena that are characteristic of a certain era. It is induced by global and local phenomena which push historical events along, and shift values that are most susceptible to these phenomena. If the shifts are comprehensive across relevant social groups, they are called zeitgeist effects. In schematic form the chain is the following:

Global and local phenomena → Zeitgeist → Zeitgeist effect → Shift in everyone's values

This study was conducted to analyze zeitgeist effects on values in Finland between 1991 and 2015. Because these effects result from system-wide changes in the conditions of a given society, a national-level analysis of overall change in values, and comprehensive analyses both across relevant social groups and between the subsequent time points are required. In following, we will first introduce our theoretical framework, and thereafter analyze zeitgeist as an empirical phenomenon. The contributions we intend to make are both theoretical and practical: How values are linked to empirical phenomena and how to study the possible impact of these phenomena on basic human values.

Firstly, we study the magnitude of the overall change in values in Finland during the research period (1991-2015), and how value change is linked to the economic development on an aggregate level. This is then used as a benchmark for evaluating the magnitude of change in our zeitgeist analyses.

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Secondly, we analyze the occurrence of zeitgeist effects during the research period. How comprehensive are they? How susceptible are different values to them? We also discuss which phenomena might have induced them.

Thirdly, we link our analyses to the fragmentation of media use, which is one of the most important media trends of the research period. It is caused by increasing digitalization and might also be one reason for a decreasing value consensus in society.

Theoretical Framework

Basic Human Values and Value Consensus

On the societal level one important function of values is to maintain continuity in society, and on the individual level values are transsituational goals; they act as guiding principles in people's lives and constitute a stable part of the human conscious cognitive system (Kluckhohn, 1951; Rokeach, 1973, 1985; Schwartz, 1992). The original 1992 version of Schwartz's theory of basic human values defines ten values, and the two-dimensional circumplex structure (see Figure 1) illustrates the relationships between them (Schwartz, 1992, 2016). The structure arises from social and psychological conflict or congruity between values that people experience when they make everyday decisions, and reveals the meanings of values (Schwartz, 1992, 2017; Schwartz & Bilsky, 1987; Schwartz, Hammer, & Wach, 2006; Schwartz et al., 2012).

Values are organized on a circular continuum according to three principles (see Figure 1). Firstly, adjacent values are compatible and opposing ones are in conflict with each other. Secondly, the interests that value attainment serves organizes values into two categories: Values from security (SE) to universalism (UN) primarily regulate social interests, and values from self-direction (SD) to power (PO) primarily regulate personal interests. Thirdly, values are divided into growth and protection values (Schwartz, 2016, 2017; Schwartz et al., 2012).

Growth values motivate people when they are free of anxiety. Self-transcendence values (benevolence [BE] and universalism) motivate social growth and emphasize concern for the welfare and interests of others (people, nature), while openness to change values (self-direction, stimulation [ST], hedonism [HE]) and achievement [AC] motivate personal growth, independence of thought and action, as well as readiness to change. The other half of the values motivate protection against threats and are linked to anxiety-avoidance. Self-enhancement values (power and achievement) motivate protecting the self, i.e. personal property and aspirations, while conservation values (security, conformity [CO], and tradition [TR]) motivate protecting the social system. Achievement is located on the border between these two, which signifies that it might play a dual role as a guiding principle: Either to motivate success according to prevailing standards, or to protect the self against threats by publicly confirming one's capabilities.

The horizontal axis of the value structure (see Figure 1) divides people into two demographic poles, the old and those with less education emphasize conservation values, while the young emphasize achievement, hedonism and stimulation. Openness to change values are typical of the well-educated. Also, value differences between men and women are clear, but small. Men consistently attribute more importance than women to power, stimulation, hedonism, achievement, and self-direction, while the reverse is true for benevolence and universalism values, and less consistently for security values (Kohn, 1977; Robinson, 2013; Schwartz, 2016; Schwartz & Rubel, 2005). Thus, values are related to individual predispositions and characteristics, especially age and education, in this order.

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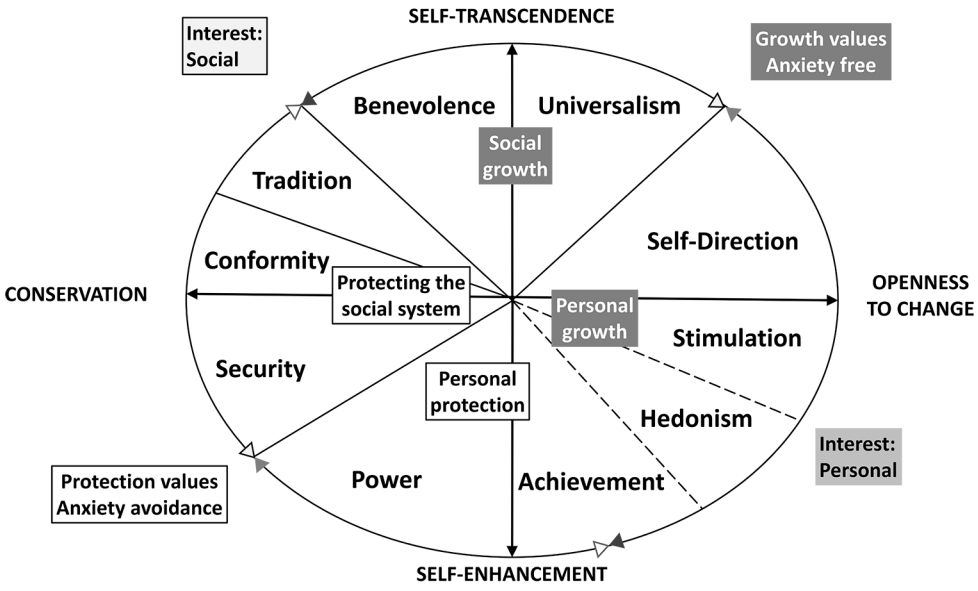

Figure 1. The theoretical structure and dynamic contrasts of basic human values (Schwartz 1992, 2016; Schwartz et al., 2012).

Moreover, values are also linked to societal issues. Value consensus focuses on the degree to which individual members of society share similar value priorities (Schwartz & Sagie, 2000). Also, democratization correlates positively with openness to change and self-transcendence values, and negatively with conservation and self-enhancement values. However, Schwartz and Sagie (2000) concluded that socioeconomic development and democratization have opposite relations to value consensus. According to them socioeconomic development increases the importance of openness to change values, and concern for the welfare of others, self-indulgence and pleasure, and the degree of consensus among citizens that these are relatively important goals. Concerning democratization, they reasoned that societal value consensus decreases as democratization increases, because democracies permit and even encourage individuals and groups to develop and express their own lifestyles and orientations. Since then, there is only one publication with regard to value consensus (Uz, 2015). It studied cultural tightness and looseness, but the Uz measure and the Schwartz and Sagie (2000) measure did not correlate significantly. Schwartz (2011) considered the estimates developed and used in Schwartz and Sagie (2000) unreliable because the analysis was carried out only in samples of teachers. Thus, until now the concept of value consensus has been more or less forgotten.

The Structure of Value Change

In their systematic analysis Bardi and Goodwin (2011) distinguished mean-level changes and intraindividual changes in values, and Schwartz's structural approach enables a detailed analysis of both kinds of changes. Bardi and Goodwin (2011) reported consistent support for the hypothesis (Bardi, Lee, Hofmann-Towfigh, & Soutar, 2009) that value change would follow a circumplex model so that when the importance of any one value changes, the adjacent (compatible) values are likely to change in the same direction and conflicting values in the opposite direction. Schwartz (2016) calls these changes value tradeoffs, and when they occur in the above manner, they are theoretically sound. While the hypothesis primarily seems to concern intraindividual value change, the findings reviewed by Bardi and Goodwin (2011) were similar for both intraindividual changes and mean-level changes. Bardi's hypothesis was partially supported by Sortheix, Olakivi, and Helkama (2013) who found an overall increase

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in conservation, but no corresponding decrease in openness to change. In addition, several recent Finnish studies failed to find the expected change pattern. In a longitudinal study of college students in 2007-2010, Myyry, Juujärvi, and Pesso (2013) found an increase in universalism and security accompanied by a decrease in achievement. These were interpreted as possible consequences of fatal school shootings in similar colleges in 2007 and 2008 or to insecurity associated with the economic recession that started in 2008. However, the same pattern of change with an increase in universalism and security, and a decrease in achievement, was found in a 2008-2011 longitudinal study of Ingrian migrants to Finland (Lönnqvist, Jasinskaja-Lahti, & Verkasalo, 2013), and also among Italian students in 2004-2008-2012 (Vecchione et al., 2016). Two years later, the rebound effect toward original value priorities was found to be the same between Ingrian migrants and Finnish students, but it did not occur among Italian students. The hypothesis of systematic change is perhaps less plausible for mean-level changes where external forces may influence different members of a target group differently. However, the above analyses, based on quite different designs, suggest that although values are largely stable, they do change in theoretically meaningful ways in relation to societal changes. Also, the above findings emphasize the importance of zeitgeist effects in values, as well as differences between countries and target groups of the studies.

Media Use and Its Fragmentation

Media use in Finland has undergone continuous change since the 1960s. Urbanization, increasing level of education and travelling, as well as diffusion of new technology increased watching TV, and the circulation of newspapers and magazines also began to increase (Heinonen & Konttinen, 2001; Kortteinen, 1982; Saari, 2007; Vesikansa, 1992). Thereafter, the number of commercial TV and radio channels has multiplied. The circulation of printed magazines and newspapers peaked at the turn of the 1990s, and both (excluding free papers) have decreased thereafter (Heinonen & Konttinen, 2001). The digitalization of mass markets began in the 1990s. For individuals and organizations digitalization means the possibility to easily share and spread all kinds of work globally throughout the Internet, since no corporeal body is needed (Corrocher & Ordanini, 2002). TV broadcasting was digitalized in the first decade of the new millennium, and watching TV increased until 2010, but stagnated thereafter (Finnpanel, 2017, p. 11). Listening to the radio has remained highly popular throughout the whole research period, although daily listening has declined slightly (Sandell, 2016). As a result, the news and entertainment supply, including the Internet, is endless, and online reading is increasing. Moreover, an important turning point in this development was the technological leap that occurred in 2007–2011 when the iPhone, iPad, and Android phones and tablets, as well as the Mobile broadband were launched, and social media started to gain popularity (Google Insight, 2017). The latter innovations had a key role in the increase in the use of the Mobile internet and online reading.

The above development is typical, not only in Finland, but globally. Technological innovations and increasing commercialization of the media market have led to the present situation where an increasing number of media outlets and products compete for public attention. Therefore, the above development is considered the most obvious cause of the fragmentation of media use (Mancini, 2013; Webster & Ksiazek, 2012). Fragmentation also induces changes in the agenda-setting possibilities that are open to the media. Agenda-setting refers to the ability of the mass media to signal to the public what is important (Cohen, 1970; McCombs & Shaw, 1972; Moy, Tewksbury, & Rinke, 2016). In printed media, the agenda of the media is set by the space and location given to the news, and on television the time given to an issue or news item is essential. Moreover, experimental research has shown that with online reading, the situation is different. Online readers differ from readers of the printed version of the

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same newspaper in what they perceive to be the most important problems facing the country (Moy, Tewksbury, & Rinke, 2016).

Thus, media use is a holistic process, and citizens belong to the audiences of several different media. According to Webster and Ksiazek (2012) there is very little evidence that audiences are composed of devoted loyalists. Moreover, research has shown that people are not always fully aware from where they have picked up certain messages (Campbell & Ling, 2009; Knobloch-Westerwick, 2015; Lin, 2009). In spite of the above, it is evident that the media repertoire an individual uses signals to him/her what is important in society. Although, the increasing fragmentation of media use weakens the agenda-setting ability of the media, the fragmented audiences live up to the agendas they receive from their personal media repertoire. Until now, the fragmentation of media use has not been studied in relation to value change.

Both Mancini (2013) and Van Aelst et al. (2017) consider the consequences of fragmentation to be serious. According to Mancini (2013), fragmentation has led to dramatic changes in professional journalism. This may have positive consequences, as it increases the number of available sources of information, but at the same time it may also have major effects on the structure of democracy that should not be underestimated. Van Aelst et al. (2017) share the latter concern. Increasing fragmentation and polarization might not only contribute to increasing relativism and increasing inequalities in political knowledge, but might also undermine the degree of inclusiveness and social cohesion by contributing to more conflict, intolerance and anti-pluralism.

Development of Hypotheses

Hypothesis H1: Overall Change in Finnish Values

The first task in the analysis of the overall change was empirical: To define a benchmark for national level change in values. Only thereafter it was possible to analyze value change more in detail. Thereafter, we began the actual analysis of the overall change by studying the link between basic human values and economic development that is well-documented in the literature. Separate studies carried out with different theoretical approaches and analysis techniques in different countries all over the world during recent decades have shown that on an aggregate level economic development is linked positively – in Schwartz's most recent vocabulary – to values that motivate personal and social growth (i.e. openness to change and self-transcendence values) and negatively to values that motivate personal protection and the protection of the social system (i.e. self-enhancement values and conservation) (Allen et al., 2007; Inglehart, 1997; Inglehart & Welzel, 2005; Schwartz et al., 2012; Schwartz & Sagie, 2000; Schwartz, Sagiv, & Boehnke, 2000).

In spite of economic fluctuations, the GDP of Finland increased 44 per cent from 1991 to 2015 (see Figure 2; Official Statistics of Finland, 2015b). Based on the above literature, we hypothesize that the overall change in Finnish values, and their link to economic development between the years 1991 and 2015 is the following:

> H1: Values are linked to economic development, and therefore values that motivate personal and social growth will increase, and as a tradeoff between opposing values, values that motivate personal protection and protection of the social system will decease during the same period of time.

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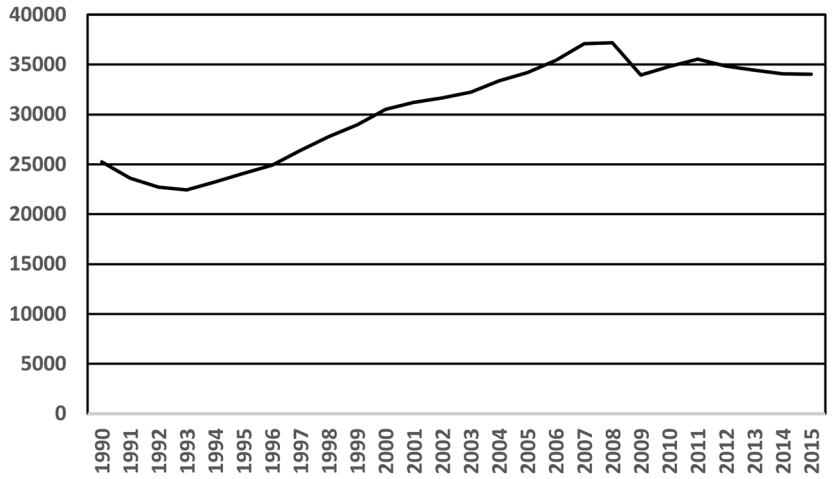

Figure 2. Economic development in Finland during the 1990-2015 period (GDP/Capita; €).

Hypotheses H2 – H5: The Occurrence of Zeitgeist Effects During Three Eras

For the zeitgeist analyses we divided the research period into three eras according to our measurement periods, and local and global events that give insights into the overall spirit in the country during these eras. The analyses will be carried out on a national level, across relevant social groups and between the subsequent time points. In the analyses, we concentrated on the distinction between growth and protection that are the two most plausible directions toward which the societal forces might push values (Schwartz et al., 2012). We analyzed value changes in the four categories of growth (personal, social) and protection values (personal protection, protection of the social system). Inside these four categories, changes in single values indicate which values are most susceptible to change during different eras.

The first era (1991-1999) — The first era began with a deep economic depression, after a ten-year period of technology-driven economic growth that ended up in overspending, the Festival of Consumerism (Hämäläinen, 2011, 2013; Kiander, 2001; Kuusterä & Tarkka, 2012). Also, the Persian Gulf War and breakup of Yugoslavia were strongly present in the daily news flow in 1991. The depression was a reaction to the overheating of the economy and to the collapse of the Soviet Union and lasted until 1993 (annual decrease of GDP -3.3%). Unemployment peaked at 19% in 1994, and was higher than ever before (Kiander & Vartia, 1994). The economic disaster touched almost every Finn personally. However, the recovery was quick, and also a relief for the majority. Information and communication technology took on an essential role in it, and opened new possibilities for many. The first era saw home computers and mobile phones become essential parts of everyday life in Finland. In the period 1994-1999 the average annual growth of GDP was +4.7%, and the good times lasted until 2007 (Hämäläinen, 2013; Kiander, 2001; Kuusterä & Tarkka, 2012; Ruostetsaari & Borg, 2004; Official Statistics of Finland, 2015b; Virmasalo, 2002). Additionally, economic inequality increased, and at the end of the era the Gini coefficient was 31% higher than before the depression (Official Statistics of Finland, 2015b). Both increasing economic inequality and economic affluence triggered off a public debate on inequality, but also increased the acceptability of getting rich. Both sides of the turbulence were well represented in the daily news flow of the 1990s. Finland joined the European Union in 1995, and the membership was not only an economic affair, but also a security issue (TESDFD, 1997). The era ended at the same time as the “first humanitarian war” in Kosovo in 1999.

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We hypothesize that the shift from the depression of the early 1990s to the economic growth of 1999 is a shift toward anxiety-free zeitgeist in two possible, not mutually exclusive ways. It might increase openness to change as a reaction to possibilities offered by new digital technology, or decrease self-enhancement because the threat toward personal property lessens.

H2: During the first era values that motivate personal growth increase as a zeitgeist effect, and values that motivate protection of the social system decrease as a tradeoff.

H3: During the first era values that motivate personal protection decrease as a zeitgeist effect, and values that motivate social growth increase as a tradeoff.

The second era (1999-2005) — The second era (1999-2005) represented the continuation of economic growth (annual growth of GDP +3.4%, Official Statistics of Finland, 2015b), and the era saw the rise of the Mobile internet and social media. Innumerable new issues, possibilities and threats were distributed via new media channels, and via more fragmented news flows (see Webster & Ksiazek, 2012). Now, threats and possibilities were global (e.g. the Millennium bug Y2K, the dot-com economy, the Internet Bubble) and due to the Internet, the daily news flow was faster than ever before. After the events of 9/11, the war against terrorism started in 2001 (Bush, 2001), and threats to global security increased[i]. The "China phenomenon" emerged during this era, and the transfer of industrial manufacturing to low-cost China and elsewhere explains the decline of Finnish industry (Mikkola & Pirttimäki, 2007).

The third era (2005-2015) — The third era began during good times, and was full of innovative information and communication technology that began to label the whole era. The good times lasted until the global financial crisis of 2008, after which the era underwent prolonged recession: The annual growth of GDP in 2005-2007 was +2.8%, in 2008-2009 it was -3.8%, and in 2010-2015 it was 0.5%; the steepest drop in GDP of -8.3% occurred in 2009 (Official Statistics of Finland, 2015b). In economic terms this era represents a shift from a long economic upswing to the long-lasting economic recession that had an even more severe impact on the Finnish economy than the depression of the early 1990s. Thanks to the single currency (euro) and the European Central Bank's recovery measures, interest rates or unemployment did not increase. At the end of the research period, climate change, global ecological problems and social and economic inequality began to cause anxiety, as well as strengthening anti-immigration attitudes and right-wing political populism. In 2014 and 2015, the Russian military intervention in Crimea and Ukraine caused anxiety, as well as the increasing immigration to Europe from the Near East and Afghanistan, and terrorism by ISIS in European cities.

Hypotheses for the 2nd and 3rd eras — Concerning zeitgeist effects, the second and third eras differ from the first one. The use of new kinds of information and communication technology dominates these eras strongly, and has changed the ways people work, shop, use media and bank services, organize their leisure time, and communicate with the authorities, commercial organizations and friends. From the Finnish perspective, both eras were basically anxiety-free. In economic terms, the second era was anxiety-free for the majority, and the third era represents a shift from a long economic upswing to the long-lasting economic recession. However, due to the European Central Bank's recovery measures its impact on everyday life was small.

We argue that concerning zeitgeist effects, the main difference between the three eras is linked to digitalization that enabled the use of new and faster media channels for an increasing part of the population. To illustrate the speed of this development, we classified the respondents as digitalized if they had access to the Internet, and

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owned a personal computer and a mobile phone.[ii] According to this definition, the individual level digitalization rose among the respondents from 1% to 91% in the 1991-2015 period (see Table 1).

Table 1

Individual Level Digitalization Among the Respondents in the 1991-2015 Period (%)

Year	1991	1999	2001	2005	2015
N	1845	1308	1400	1295	1325
Digitalized, %	1.2	33.9	47.1	70.1	91.1

This development increased the number of media outlets that compete for public attention, and therefore increased fragmentation of media use. As a result, innumerable new issues, possibilities and threats were distributed via new and faster media channels, and via more fragmented news flows. Thus, the main difference between the second and third eras in comparison to the first one is qualitative; the possibility to share collective experiences digitally and directly with close contacts and friends improved considerably. When the second and third eras are compared with each other, their differences are mostly quantitative. From 2007 onward new technology (iPhone, iPad, and Android phones and tablets, Mobile broadband) made communication easier, cheaper and faster. Regarding Mobile broadband, Finland was the leading country in the European Union having almost 140 connections per 100 people at the end of 2014 (Ofcom, 2016).

Concerning zeitgeist effects, there were, of course, worries that were linked to the economy, security or other relevant news. However, these worries were quite different in different social groups. Therefore, there is no reason to believe that much of the most relevant news of the second and the third eras would have been strong enough to influence the majority of Finns. Moreover, technological changes enabled the new situation in which the contents of communications are not shared as deeply as they were before. The phenomenon is linked to the increase of skim reading (Carr, 2010; Wolf, 2018) due to which we don't have time to grasp the complexity of the content. When the content is not properly understood, it is impossible to share daily news with others as consistently as before.

For the above reasons, we hypothesize (H4) that the main difference between the first era in comparison to the second and third eras is in the decrease of comprehensive zeitgeist effects. For the difference between the second and third era we hypothesize (H5) that the difference will be more fundamental than the previous one. Due to social media, values of different groups may start to change in different directions.

H4: There will be less comprehensive zeitgeist effects during the second and third eras than there were during the first era.

H5: Values of different groups start to change in opposite directions during the third era.

Hypotheses H6 and H7: Value Consensus and the Fragmentation of Media Use

The media market changed a lot during the research period. Rapidly increasing digitalization increased the number of media outlets that compete for public attention, and therefore also the fragmentation of media use. Because the latter might undermine the degree of inclusiveness and social cohesion, we study whether the fragmentation of media use is linked to the level of value consensus. According to Schwartz and Sagie (2000), socioeconomic development increases the degree of value consensus (due to the acceptance of important common goals),

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whereas democratization decreases it (due to the emphasis of important individual interests). Schwartz and Sagie (2000) base their definition of democratization on the degree of political rights and civil liberties, and use four criteria to define socioeconomic development: Gross national product, level of education, proportion of agricultural work, and the number of landline phones in 1987.

The links between democratization and socioeconomic development and value consensus in Finland are the following. The level of democratization is among the highest in the world. Finland was the first country in respect of both political rights and civil liberties 1991-2015 (Freedom House, 1991-2015), and has the longest tradition of applying democratic practices (Jussila, Hentilä, & Nevakivi, 2004), and along with Denmark, Finland has the world's freest and most reliable elections (Norris et al., 2017). Also, the country is one of the most stable in the world (Fragile States Index, 2018). Concerning socioeconomic development, the GDP per capita has grown steadily with two exceptions: The depression of the early 1990s, and the stagnation of growth after the global finance crisis in 2008 (see Figure 2).

Schwartz and Sagie's (2000) second and third criteria for socioeconomic development suggest an increase in value consensus for the whole research period (Official Statistics of Finland, 2010, 2015a). However, the fourth criterion lost its validity during the research period because mobile technology has almost totally replaced landlines since 1991. Finland was the leading country in Europe in the use of the Mobile internet in 2014 (Ofcom, 2016). Thus, the level of democratization has been stable in the country during the research period, but technological change has been remarkable due to digitalization.

Due to societal change, digitalization has brought the consequences of democratization and the fragmentation of media use closer to each other. Although these two might lead society in opposite directions, both fulfil the criterion set by Schwartz and Sagie (2000) because they "permit and even encourage individuals and groups to develop and express their own lifestyles and orientations" (p. 490).

We studied the relationship between value consensus and socioeconomic development with two hypotheses. H6 addresses the link between socioeconomic development on value consensus, and H7 how and in which groups the fragmentation of media use predicts variance in value consensus.

H6: Value consensus increases from 1991 to 2005, but stagnates thereafter.

H7: The fragmentation of media use increases in 2001-2015 and by the end of the research period the fragmentation of media use predicts the level of value consensus in all age groups, and predicts it best in groups in which the largest changes in values occur.

Method

Data

The present study is based on five cross-sectional surveys carried out in Finland in the age group of 15-75 (N = 7.172) in the 1991-2015 period. All five surveys (A3-Study, 1999, 2001, 2005, and 2015; Monitor, 1991) are extensive commercial studies that analyze consumer and societal issues and their relationships with values and attitudes. The 2015 data were collected deliberately for this study but the earlier datasets were originally collected for other purposes. Therefore, the decision to concentrate on these particular years is limited by the years in which

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values were measured in these national surveys. During the 24-year-long time span of the study field work practices have changed several times but the basic principles have remained each time the same.[iii]

For the analyses, data were weighted by sex, age and education to correspond to the census data for the same year. Finns are ageing fast, and only Japan, Italy, Germany and Portugal are ageing faster (World Bank, 2017). During the research period, the mean age of the samples increased from 40.1 years to 45.7 years of age, $F(4, 7161) = 109.67$, $p < .001$, $d = 0.2$. The level of education has risen for decades in Finland (Official Statistics of Finland, 2010) especially in the older population (OECD, 2013). Although the data were collected via cross-sectional surveys, on the level of social groups longitudinal analyses are possible.

Measurement of Values and Value Consensus

We adopted the Schwartz Value Survey (SVS) for the analyses. Values were measured in 1991, 1999, 2001, 2005 and 2015, and the composite scales were computed for each of the ten basic human values (Schwartz, 1992). The original SVS-inventory consists of 56 items. 45 of these are culturally stable and used for computing the ten values. By 1999, the following changes were made to the inventory, 'self-indulgent' (to measure hedonism, a culturally stable item) and 'privacy' were added, and one item, 'detachment' was removed (Schwartz & Sagiv, 1995, see also Schwartz, 2009, 2012). Thus, in the 1999-2015 period the SVS inventory consists of 57 items, out of which 46 are culturally stable. To reduce response effects, value items were centered by standardizing them around individual means. The Cronbach's αs of the ten SVS-values varied between .62 – .77 (mean .70). Value consensus was computed by reversing the sign of the standard deviation of the raw scores. In computing value consensus, we applied the idea presented by Schwartz and Sagie (2000), but computed only the overall value consensus based on the 45-46 culturally stable items instead of computing it for each of the ten values.

Factor-Analytical Approach to Values

We improved the comparability and reliability of the measurement by applying the factor-analytical approach developed by Verkasalo, Lönnqvist, Lipsanen, and Helkama (2009). This resulted in an orthogonal three-factor structures of the SVS values. Because almost all of the variance associated with response tendency loaded on the first factor, the second and third factors are free of response tendency effects. After the response tendency factor was set aside, the remaining two factors were rotated by using the graphic rotation-option of the Survo (MM version 2.47) statistical package (Mustonen, 1992), to correspond to the theoretical value dimensions from conservation to openness to change (henceforth the openness to change dimension) and from self-enhancement to self-transcendence (henceforth the self-transcendence dimension). The factor scores were then computed by using the least-squares regression method. Both value dimensions cover the whole value dimension, i.e. from conservation to openness to change and from self-enhancement to self-transcendence. The means of the respondents on both dimensions indicate their location on the dimensions, so that tradeoffs between opposite values are reflected in this measure. Henceforth this two-dimensional space will be called the Schwartz's value map (or value map, if there is no risk of confusion).

The reliabilities of the two value dimensions were estimated with Tarkkonen's General Reliability Coefficient GRC[iv], a statistical technique for assessing the reliability of composite scales. For the two value dimensions the mean reliability (GRC) is .81 (range .80-.81).

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Replacing the Bonferroni Adjustment With a DS Criterion

The large number of comparisons needed in the analysis of zeitgeist effects raise the problem of alpha-error inflation, and controlling chance results becomes necessary. However, the Bonferroni adjustment (Ellis, 2014; Gumming, 2012) is not an optimal solution for controlling Type I (false positives) and Type II errors (false negatives) in the analysis of values. Values are not independent of each other; as the circumplex model illustrates, their mutual relationships (i.e. tradeoffs between opposite values) are meaningful both in the analysis of values and value change (Bardi & Goodwin, 2011; Bardi et al., 2009; Schwartz, 2016). Thus, instead of the Bonferroni adjustment, we applied a combination of theoretical and statistical criteria that better suit Schwartz's value theory.

We used two theoretical and two statistical criteria. The first theoretical criterion is based on Hofstede's (2001) idea that zeitgeist effects shift everyone's values. Therefore, we concentrated on the comprehensiveness of value changes that occur across social groups during the measurement periods. The second theoretical criterion is based on the quality of the tradeoffs between opposing values, i.e. whether they are theoretically sound or not (Schwartz, 2016). The first statistical criterion is the statistical significance of the mean-level changes in values ($p < .05$). The second statistical criterion is the effect size of value changes: It must be at least at the same level as the overall change in values during the research period. We adjusted Cohen's *d* to better fit to analysis of value change, as the interpretation of Cohen's *d* varies in different fields of research (Hattie, Rogers, & Swaminathan, 2014), by computing the median of the absolute level of national-level changes in the 55 common SVS value items from 1991 to 2015, which is $d = 0.20$ (range 0.00-0.44).

In summary, we concentrated on 5-6/6 zeitgeist effects (changes that occur in at least five or six out of the six age-education groups [defined in Figure 3]) and theoretically sound tradeoffs that are significant ($p < .05$) and their effect sizes are at least at the same level as the median of the absolute value of the overall value change during the research period ($d \leq -0.2$ or $d \geq 0.2$). Henceforth the above combination of statistical significance and effect size is called the *DS* criterion. By applying it to Table 4, 24% of the value changes meet the *DS* criterion. At the same time, only 9% of the value changes are significant after the Bonferroni adjustment ($\alpha = .05$; the number of tests = 280; $p = .0002$).

Measurement of Media Use and Its Fragmentation

We adopted the user-centric approach (Webster & Ksiazek, 2012) for the measurement of media use and its fragmentation. The questionnaires of each survey focus on the media repertoires of the respondents i.e. the subsets of available media that the respondents use regularly. The idea is to capture all the typical ways on the level of media categories that respondents use when they follow news or share news with their peers during this 24-year period of time.

First of all, media use was studied in a comparable way in 2001, 2005, and 2015. Because our aim is to analyze zeitgeist effects, we concentrate in our media analysis on the phenomena that are most relevant from this viewpoint. Therefore, we developed a composite scale for the fragmentation of media use to give a rough estimate of how fragmented the news agenda of a respondent is. Of course, the variable of the fragmentation of media use simplifies the real-life situation. The dataset (A3-Study, 1999-2015) includes, in each measurement, information on the use of four types of traditional media: (1) Newspapers (print or online), (2) magazines (print or online), (3) watching TV and (4) listening to the radio. The use of the Internet and social media were included as they became available: (5) Discussing with friends and (6) others, (7) tracking news and events, and (8) reading blogs and, finally, the

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use of (9) the Internet for other purposes. The frequency of use was converted to a four-step scale (never, seldom, weekly, and daily). The higher the scale value, the more fragmented is the media use of the respondent.

Results

Overall Change in Finnish Values

According to H1 values are linked to economic development, and therefore values that motivate personal and social growth will increase, and as a tradeoff between opposing values, values that motivate personal protection and protection of the social system will decease during the same period of time. We tested H1 with three approaches.

Overall Change on the Two Value Dimensions

We first tested H1 by comparing the means of the factor scores of the openness to change and self-transcendence dimensions between 1991-2015 (see Table 2) using a one-way ANOVA. The results indicated that the factor scores of both value dimensions increased significantly ($p < .001$). However, only on the openness to change dimension the change met the *DS* criterion.

Table 2

Overall Change in the Two Value Dimensions Between 1991 and 2015

	1991 (n = 1845)		2015 (n = 1287)		Total (N = 3132)			ANOVA		
Dimension	***M***	***SD***	***M***	***SD***	***M***	***SD***	***d***	***df***	***F***	***Sig.***
Openness to change	98.47	10.76	100.17	9.73	99.16	10.38	**0.2**	1, 3130	20.42	***
Self-transcendence	99.27	9.88	100.59	10.02	99.81	9.96	0.1	1, 3130	13.38	***

Note. For value changes that met the *DS* criterion ($p < .05$ and $d \leq -0.2$ or $d \geq 0.2$), *d*s are printed in **underlined bold** to indicate an increase, and in mere **bold** to indicate a decrease.

***$p < .001$.

The Comprehensiveness of the Overall Change Across Societal Groups

Secondly, we studied the comprehensiveness of the overall change in values across social groups in the 1991-2015 with our graphical analysis (see Figure 3). This analysis is the first test of Hofstede's (2001) idea that zeitgeist effects shift everyone's values. However, in Finland education also matters due to the demographic development of the research period (see Appendix Table A.1). Therefore, we divided the sample into three age groups: The young (15-29 years), the middle-aged (30-49 years) and elderly people (50-75 years), and two education levels (basic education or less and secondary education or more). Thereafter we combined these into six psychologically relevant age-education groups. The comprehensiveness of the overall value change on the two value dimensions in the 1991-2015 period was analyzed across these six age-education groups.

A graphical analysis based on the two value dimensions illustrates the amount and direction of the overall change in Finnish values and the changes in the six age-education groups (see Figure 3). In this analysis, the total mean and the means of the six age-education groups on both value dimensions are projected on the Schwartz's value

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map in 1991 and in 2015. The rules for interpretation of the 95% bivariate confidence intervals are following (see Verkasalo, Lönnqvist, Lipsanen, & Helkama, 2009). First, if the confidence intervals (circles) do not overlap, the groups differ significantly from each other on the $p < .05$ level. Second, if the confidence intervals overlap fully, the groups do not differ from each other significantly. Third, if the confidence intervals overlap partially, the statistical significance of the value difference between the groups is in between the above alternatives, but always on the $p > .05$ level.

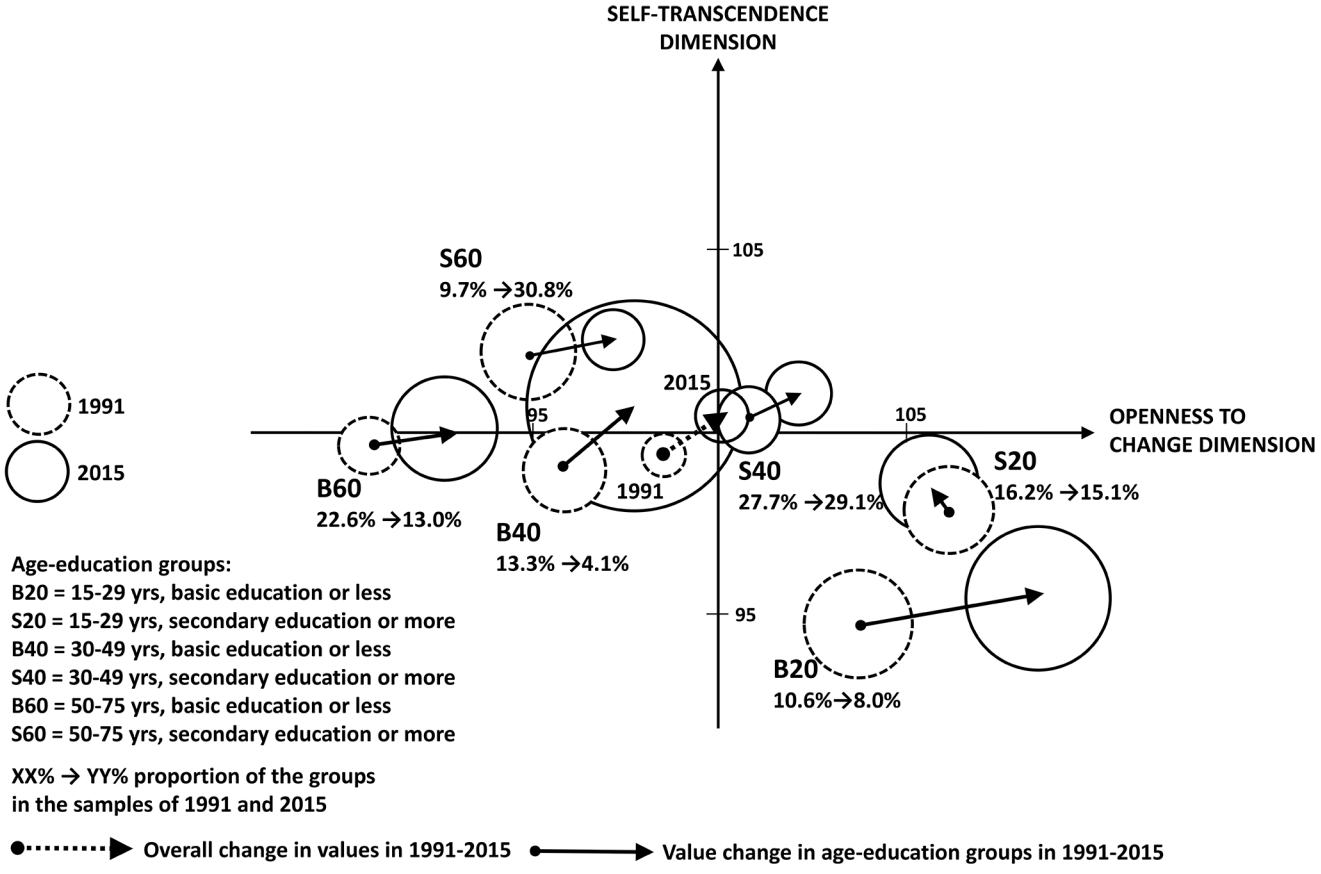

Figure 3. Age-education groups on the value map in 1991 and 2015. The diameter of the circles indicates the bivariate 95% confidence interval (for interpretation, see text).

The positionings of the age-education groups on the Schwartz's value map in 1991 and in 2015 indicated that the groups differ from each other more on the openness to change dimension than on the self-transcendence dimension (see Figure 3). As concerns value change on the two value dimensions the general movement (arrows) on the value map was toward the upper right (excluding S20). However, two age-education groups contributed to the increase in openness to change more than the others: The less-educated young (B20), and the well-educated elderly respondents (S60). In addition, the internal variation has increased considerably in age-education group B40 because the proportion of this group has decreased in the population. However, no significant changes toward self-transcendence were observed in any of the groups.

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Mean-Level Changes in the Ten Basic Values

Thirdly, we first tested H1 by comparing the means of the ten basic human values between 1991 and 2015 using a one-way ANOVA (see Table 3). The results indicated that in five of the ten values the change meets the *DS* criterion. The largest changes occurred in three values – power, tradition and achievement – which all decreased. The changes in both universalism and security were on the same level. Universalism decreased and security increased during the research period. The simultaneous decrease of the growth value universalism and the two protection values, achievement and power, is an atypical tradeoff between opposing values.

Table 3

Overall Change in the Ten SVS Values Between 1991 and 2015

	1991 (*n* = 1845)		2015 (*n* = 1289)		Total (*N* = 3133)			ANOVA		
Value	***M***	***SD***	***M***	***SD***	***M***	***SD***	***d***	***df***	***F***	***Sig.***
Benevolence	0.53	0.38	0.51	0.36	0.52	0.37	0.0	1, 3134	1.55	ns.
Universalism	0.32	0.35	0.26	0.39	0.30	0.37	**-0.2**	1, 3134	24.51	***
Self-Direction	-0.02	0.42	0.03	0.42	0.00	0.42	0.1	1, 3133	9.49	**
Stimulation	-0.43	0.60	-0.52	0.62	-0.47	0.61	-0.1	1, 3133	15.84	***
Hedonism	-0.02	0.65	0.00	0.65	-0.01	0.65	0.0	1, 3132	0.82	ns.
Achievement	-0.19	0.48	-0.34	0.49	-0.25	0.49	**-0.3**	1, 3132	74.00	***
Power	-0.83	0.48	-1.08	0.49	-0.93	0.50	**-0.5**	1, 3131	207.52	***
Security	0.30	0.37	0.37	0.39	0.33	0.38	**0.2**	1, 3134	20.72	***
Conformity	0.25	0.42	0.21	0.44	0.23	0.43	-0.1	1, 3133	5.67	*
Tradition	-0.57	0.48	-0.76	0.49	-0.65	0.49	**-0.4**	1, 3133	128.47	***

Note. Values are ordered from Growth (top) to Protection (bottom). For value changes that met the *DS* criterion ($p < .05$ and $d \leq -0.2$ or $d \geq 0.2$), *d*s are printed in **underlined bold** to indicate an increase, and in mere **bold** to indicate a decrease.
*$p < .05$. **$p < .01$. ***$p < .001$.

Support for H1: Overall Change in Finnish Values?

Hypothesis 1 received support from the analysis of the two value dimensions. The increase on both value dimensions was significant in the 1991-2015 period, though the effect size of the change on the self-transcendence dimension did not meet our *DS* criterion. As a conclusion, both openness to change and self-transcendence increased significantly in the 1991-2015 period, and openness to change dominates the change.

According to the graphical analysis, the contribution of the well-educated elderly respondents (S60) to the overall change is the most important. The proportion of this group has increased from 9.7% to 30.8% in the 1991-2015 period, and therefore, its weight in the total sample has increased substantially. As regards the increase in openness to change among the less-educated young, a plausible reason for that is diffusion of digitalization. Innovative technology offers more possibilities for personal development in 2015 (e.g. the Mobile internet, social media) in comparison to 1991 (e.g. simple home computers and computer games) especially for the young who are the most active users of these services (Official Statistics of Finland, 2015c).

When the same analysis was carried out with the ten basic values, Hypothesis 1 received only minor support. Firstly, three (AC, PO, TR) of the five protection values decreased and SE increased, but none of the growth values

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increased. The decrease in TR was the only change in the hypothesized direction. Also, the tradeoff between universalism and power and achievement was unexpected.

During the research period the economy of the country (GDP) improved by 44 per cent, and both openness to change and self-transcendence increased significantly. Thus, the results are consistent with relevant research (Allen et al., 2007; Inglehart, 1997; Inglehart & Welzel, 2005; Schwartz et al., 2012; Schwartz & Sagie, 2000; Schwartz, Sagiv, & Boehnke, 2000).

The Occurrence of Zeitgeist Effects During the Three Eras

Vicissitudes in Values in 1991-2015

The vicissitudes of the ten values between the subsequent time points give a good start for the zeitgeist analyses (see Figure 4).

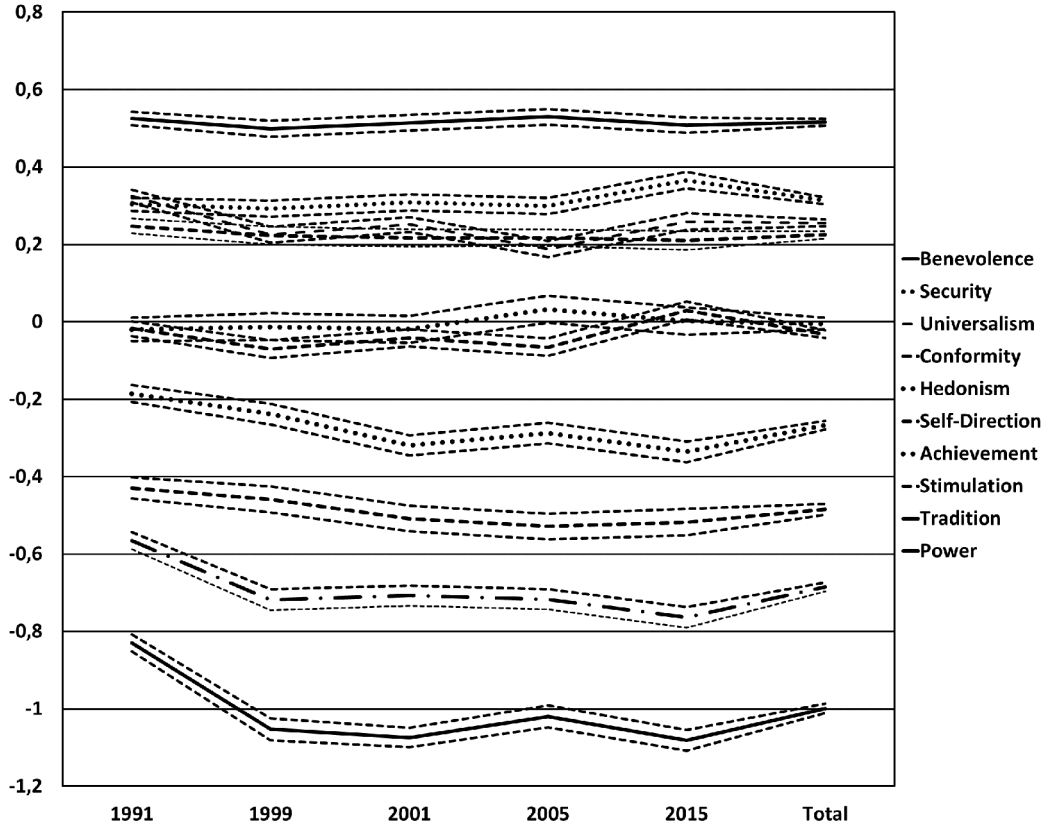

Figure 4. Changes in the centered scores of the ten basic values in Finland in 1991-2015. The dense dashed lines indicate the 95% confidence level of value changes.

The most relevant finding is the consistency with which the ten values changed during the research period. Half of them (BE, AC, ST, TR, PO) kept their places in the value hierarchy in all five time points, while the other five were clustered in two groups (SE / UN / CO and HE / SD). However, after the year 1991 the ways of security, universalism and conformity parted, and after 2005 the importance of security began to increase. These shifts between subsequent time points were studied by analyzing zeitgeist effects across the six age-education groups (see Table 4).

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The Analysis of Zeitgeist Effects

Summary of Hypotheses H2-H5 — For the first era (1991-1999), we hypothesized that the shift from the depression toward anxiety-free zeitgeist could occur in two possible ways. According to H2, during the first era values that motivate personal growth increase as a zeitgeist effect, and values that motivate protection of the social system decrease as a tradeoff. H3 presented the other alternative: During the first era values that motivate personal protection decrease as a zeitgeist effect, and values that motivate social growth increase as a tradeoff. Of course, the third alternative is that both predictions might come true. For the second and third era expected value changes differ from the ones that were typical of the first era. The major changes are linked to the quantitative (faster, more widely distributed) and qualitative (new kinds of user interfaces) changes in technology. Therefore, we hypothesized (H4) there will be less comprehensive zeitgeist effects during the second and third eras than there were during the first era. In addition (H5), values of different groups may start to change in opposite directions during the third era.

Analysis strategy — To study the comprehensiveness of zeitgeist effects across the age-education groups and between the subsequent time points, we first screened out the non-significant and trivial changes i.e. changes that did not meet the *DS* criterion ($p < .05$ and $d \leq -0.2$ or $d \geq 0.2$). We did that by running a series of 280 ANOVAs that cover all measurement periods. Only then it was possible to discover zeitgeist effects and tradeoffs between opposing values. Due to space limitations, we condensed the results of each ANOVA into one number, Cohen's *d* (see Table 4). In the analysis changes that met the *DS* criterion in 5-6/6 age-education groups were classified zeitgeist effects (changes that occur in at least five or six out of the six age-education groups [defined in Figure 3]). Also, we took into consideration changes that occurred at least in half of the age-education groups (3-4/6). We comment on other changes only if they are theoretically interesting due to exceptional tradeoffs or directions of change.

Analyses of the occurrence of zeitgeist effects during the three eras — As Table 4 shows, during the first research period we found one comprehensive (6/6) and one 5/6 zeitgeist effect, when power and tradition decreased. These were accompanied by the 4/6 decrease of universalism, which we did not consider a theoretically sound tradeoff with the decrease of power. Instead, it seems to be a combination of two independent value responses to different events during the eight years long period of time[v]. Thereafter, we found five 3/6 zeitgeist effects from the subsequent measurement periods. In addition, achievement decreased in age-education groups S20, B40 and S40 between 1999-2001. Universalism decreased in B20, S40 and B60 between 2001-2005. Between 2005-2015 self-direction increased in B20, S20 and S40, security increased in B40, B60 and S60, and tradition decreased in B20, S40 and S60. However, the changes regarding universalism in five age-education groups in the third era were not considered a zeitgeist effect because one of the groups (B40) changed in the opposite direction (UN-) to the others (UN+) (+ and –signify increases and decreases in values).

The first signs of value changes in different directions were detected between 2001-2005, when tradition increased in S20 and decreased both in B60 and S60. Between 2005-2015 value changes in different directions continued in three values universalism, achievement and conformity. All age-education groups were involved in these changes between 2001-2015, and in three groups the changes resulted in theoretically sound tradeoffs that met the DS criterion (2001-2005: In B20 UN-/AC+, PO+; HE+/SE-, and in S40 UN-/PO+; 2005-2015: In B20 UN+/AC-, SD+/CO-,TR-; B40 UN-/AC+, ST-, HE-/SE+,CO+, and S40 SD+/TR-).

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Table 4

A Summary of Separate ANOVAs in the Research Period

Age-education group	Total	B20	S20	B40	S40	B60	S60
1991-1999: The 1st era							
*N*1991	1845	194	296	244	507	413	177
*N*1999	1309	124	183	106	429	256	204
Benevolence	-0.1	**-0.3**	-0.1	-0.1	0.0	0.1	-0.2
Universalism	**-0.3**	-0.1	**-0.3**	**-0.3**	**-0.3**	**-0.6**	-0.2
Self-Direction	-0.1	-0.1	-0.2	0.0	-0.1	**-0.2**	**-0.3**
Hedonism	0.0	-0.1	0.0	0.0	-0.1	**0.3**	0.1
Power	**-0.4**	**-0.3**	**-0.5**	**-0.5**	**-0.4**	**-0.4**	**-0.4**
Security	0.0	**-0.4**	0.1	-0.2	0.1	-0.1	0.1
Conformity	-0.1	-0.1	0.0	0.0	**-0.2**	0.1	0.1
Tradition	**-0.3**	-0.1	**-0.3**	**-0.3**	**-0.5**	**-0.3**	**-0.4**
1999-2005: The 2nd era							
1999-2001							
*N*1999	1309	124	183	106	429	256	204
*N*2001	1400	128	205	103	420	271	259
Universalism	0.1	0.1	0.0	0.1	0.0	**0.2**	0.1
Self-Direction	0.1	0.2	0.1	0.1	-0.1	0.1	**0.2**
Stimulation	-0.1	0.1	**-0.2**	-0.1	0.0	-0.1	-0.1
Achievement	**-0.2**	-0.1	**-0.2**	**-0.4**	**-0.2**	-0.2	0.1
Security	0.0	0.2	0.0	0.2	0.1	-0.1	-0.2
Conformity	0.0	0.0	-0.1	**-0.3**	0.1	0.0	-0.2
2001-2005							
*N*2001	1400	128	205	103	420	271	259
*N*2005	1294	125	192	68	376	222	294
Universalism	**-0.2**	**-0.3**	-0.1	-0.3	**-0.2**	**-0.3**	-0.1
Hedonism	0.1	**0.3**	-0.1	0.2	0.1	0.1	0.1
Achievement	0.1	**0.3**	0.0	0.2	-0.1	0.1	0.1
Power	0.1	**0.3**	0.0	-0.2	**0.2**	0.1	0.0
Security	0.0	**-0.3**	0.0	-0.1	-0.1	0.0	0.1
Tradition	0.0	0.1	**0.2**	0.2	0.1	**-0.3**	**-0.2**
2005-2015: The 3rd era							
*N*2005	1294	125	192	68	376	222	294
*N*2015	1287	101	192	52	369	152	381
Benevolence	-0.1	0.0	-0.1	0.1	**-0.2**	-0.2	0.0
Universalism	**0.2**	**0.5**	**0.2**	**-0.4**	**0.2**	**0.3**	0.0
Self-Direction	**0.2**	**0.6**	**0.3**	0.1	**0.3**	0.1	0.1
Stimulation	0.0	0.1	0.1	**-0.6**	0.1	0.0	0.1
Hedonism	0.0	0.2	-0.1	**-0.6**	0.0	0.0	0.1
Achievement	-0.1	**-0.4**	0.0	**0.8**	0.0	-0.2	**-0.2**
Power	-0.1	-0.2	-0.1	0.3	-0.1	-0.1	-0.1
Security	**0.2**	0.2	-0.1	**0.6**	0.1	**0.3**	**0.2**
Conformity	0.0	**-0.5**	-0.2	**0.5**	0.0	-0.1	**0.2**
Tradition	-0.1	**-0.3**	0.1	0.0	**-0.2**	0.0	**-0.2**

Note. Values for each time span are ordered from Growth (top) to Protection (bottom). The results of each ANOVA are condensed into one figure, Cohen's *d*. For value changes that met the *DS* criterion ($p < .05$ and $d \leq -0.2$ or $d \geq 0.2$), *d*s are printed in **underlined bold** to indicate an increase, and in mere **bold** to indicate a decrease. The definitions of the six groups: B = basic education or less, and S = secondary education or more; 20: 15-29 yrs. 40: 30-49 yrs, and 60: 50-75 yrs.

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Support for H2-H5: The occurrence of zeitgeist effects during the three eras? — Hypothesis 2 received indirect support from the analysis of the ten basic values in the first era. Tradition decreased as a 5/6 zeitgeist effect, and one value that motivates personal growth (hedonism, in B60) increased. Hypothesis 3 also received partial support. Power that motivates personal protection decreased as a 6/6 zeitgeist effect, but so did universalism, though only in four groups. According to Schwartz et al. (2012) the decrease of power is a plausible consequence of the recovery from the economic depression of the early 1990s that was a relief for the majority. As to the decrease in tradition, the finding indicates cautious acceptance of the renewal of society. As a conclusion, these two findings suggest that the recovery from the depression dominates Finnish values. If so, the rise of information and communication technology in the country was not very important for the majority. However, the tradeoffs linked to these changes – no increase in openness to change as a zeitgeist effect but a decrease in tradition (5/6 zeitgeist effect), and the decrease in both universalism (4/6) and power (6/6 zeitgeist effect) – were either vague or unexpected, and demand further discussion.

Hypotheses 4 and 5 received support from the analysis of the ten basic values in the second and third eras. 5-6/6 zeitgeist effects in values disappeared completely after the first era as hypothesized in H4. During the second and third eras there were no changes that involved more than three age-education groups at a time. Changes that involved three age-education groups occurred in five values. Hypothesis 5 also received support from the analysis of the ten basic values in the third era. During the third era changes in opposite directions occurred in three values, and these involved four age-education groups altogether. This development already started in 2001-2005, when changes in the opposite direction occurred in one value, tradition, and these changes involved three age-education groups. Of course, it is possible that these changes are false positive findings. However, these changes are significant and meet our *DS* criterion. Moreover, theoretically sound tradeoffs (e.g. UN-/AC+,PO+ in B20 in 2001-2005) between opposing values occur in five groups out of 12, and in five groups that were involved in these changes in 2001-2015, the tradeoff did not meet our *DS* criterion, but was in the right direction (e.g. UN+/PO- in S40 in 2005-2015). As a conclusion, our results suggest that zeitgeist effects disappeared in the new millennium, together with a new phenomenon, the increase of value changes in opposite directions.

Value Consensus and the Fragmentation of Media Use

Finally, we studied the relationship between socioeconomic development, the fragmentation of media use, and value consensus with two hypotheses. H6 focused on the link between socioeconomic development (that increased until time point 2005) and value consensus, as follows: Value consensus increases from 1991 to 2005, but thereafter it stagnates. H7 focused on how and in which groups the fragmentation of media use predicts variance in value consensus: The fragmentation of media use increases in 2001-2015 and by the end of the research period the fragmentation of media use should predict the level of value consensus in all age groups, and predicts it best in groups in which the largest changes in values occur.

Analyses of Value Consensus and the Fragmentation of Media Use

We focused on the media repertoires of the respondents that they use on a day-to-day basis, and studied with one-way ANOVAs and *t*-tests differences between the age-education groups concerning the fragmentation of media use. We found that the fragmentation of media use increased as a consequence of the increased media supply from 2001 to 2015 in each age-education group (see Figure 5). It increased from 11.1 in 2001 to 16.7 in 2015 in the overall sample, $F(2, 4016) = 1107.67$, $p < .001$, $d = 1.4$. The maximum differences between the age-education groups were significant each year:

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- 2001 S20 vs. B60: 11.53 vs. 10.33; t = 7.77; df = 423.56; p < .001; d = 0.7
- 2005 B20 vs. B60: 15.84 vs. 10.97; t = 12.60; df = 201.18; p < .001; d = 1.5
- 2015 B40 vs. S40: 15.83 vs. 17.90; t = -3.692; df = 60.15; p < .001; d = -0.7

Differences between education levels were not significant in the youngest age group in 2001, but in the two older ones they were: B40 vs. S40: 10.59 vs. 11.43; t = 3.706; df = 144.77; p < .001; d = 0.4; 2015: B60 vs. S60: 10.33 vs. 10.91; t = -3.637; df = 494.38; p < .001; d = -0.3). In 2015, the differences were significant in all three age groups: (B20 vs. S20: 17.52 vs. 18.50; t = 3.032; df = 220.31; p < .01; d = 0.4; 2015: B40 vs. S40: 15.83 vs. 17.90; t = 3.692; df = 60.15; p < .001; d = 0.7; 2015: B60 vs. S60: 13.80 vs. 16.10; t = 6.445; df = 275.21; p < .001; d = 0.6).

These findings demand further analyses (see Directions for Future Research).

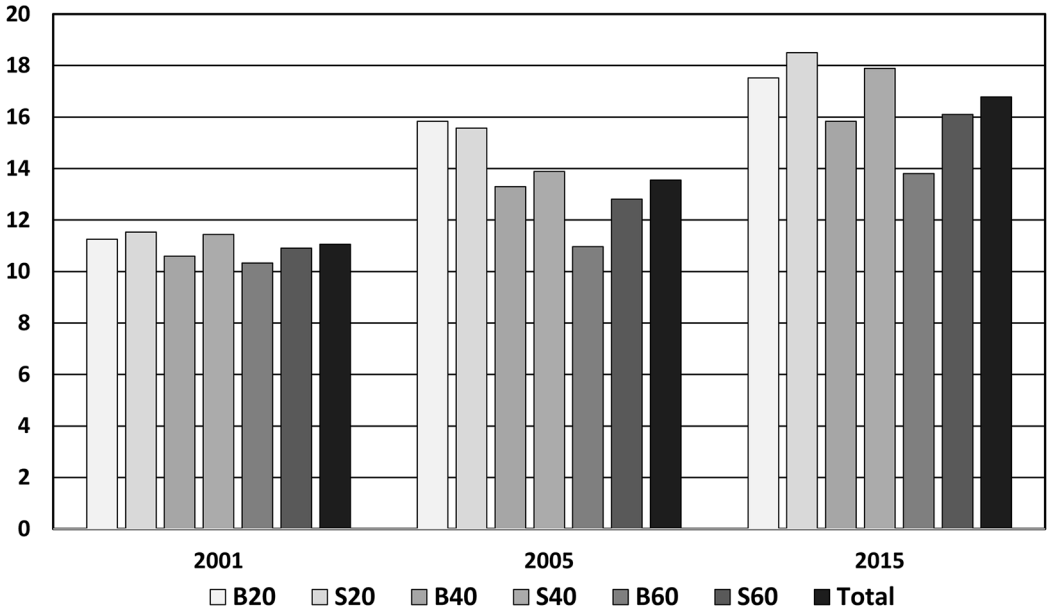

Figure 5. The fragmentation of media use in 2001-2015. The definitions of the six groups: B = basic education or less, and S = secondary education or more; 20: 15-29 yrs. 40: 30-49 yrs, and 60: 50-75 yrs.

In 1991, 95.1% of the respondents had never used the Internet, but in 2015 the proportion of daily users was 74.5%. Despite the above, traditional media – newspapers, magazines, TV, and radio – still had an important role in the media repertoire. All of the six age-education groups still used on average two or three out of the four traditional media daily or weekly in 2015.

Year 2005 was the peak year in four of the six age-education groups (see Figure 6), and therefore the measurement period was divided into two parts: 1991-2005 and 2005–2015. In the 1991-2005 period, value consensus increased, the change met the *DS* criterion in the overall sample and in all age-education groups except in B40 and S40. In the 2005-2015 period, the level of value consensus stagnated in the overall sample and in five age-education groups, and the only change that met the *DS* criterion is the decrease of value consensus in the B40 group, t(119) = 2.527, p < .05; d = -0.5).

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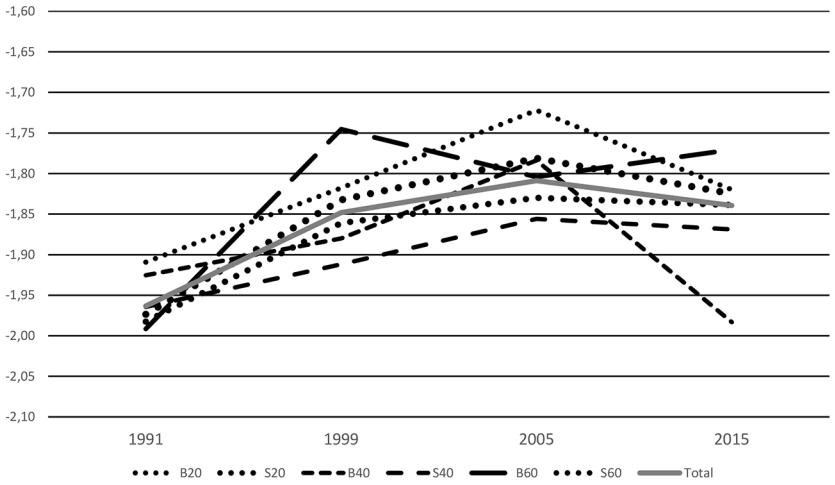

Figure 6. Changes in value consensus in the 1991-2015 period in the overall sample and in age-education groups. The definitions of the six groups: B = basic education or less, and S = secondary education or more; 20: 15-29 yrs. 40: 30-49 yrs, and 60: 50-75 yrs.

Next, we used regression analyses to examine how the fragmentation of media use predicts the variance of value consensus in the overall sample and in the age-education groups in 2001, 2005, and 2015. The β coefficients and adjusted R^2 values (%) from the linear regression analyses are shown in Table 5.

Table 5

A Summary of 21 Regression Analyses

Measure	Total	B20	S20	B40	S40	B60	S60
2001 (*N*)	1400	128	205	103	420	271	259
Adj. R^2 (%)	0.5%	0.8%	4.3%	0.4%	0.5%	2.4%	0.4%
β	0.075	0.014	0.217	0.073	0.087	0.168	0.016
t	2.828	0.16	3.174	0.738	1.794	2.789	0.253
Sig.	**	ns.	**	ns.	ns.	**	ns.
2005 (*N*)	1294	125	192	68	376	222	294
Adj. R^2 (%)	0.1%	0.5%	0.5%	37.2%	0.1%	0.2%	0.2%
β	0.05	0.12	0.03	0.62	0.05	0.08	0.04
t	1.693	1.297	0.341	6.398	0.862	1.221	0.737
Sig.	ns.	ns.	ns.	***	ns.	ns.	ns.
2015 (*N*)	1287	101	192	52	369	152	381
Adj. R^2 (%)	1.0%	7.8%	3.2%	26.3%	1.5%	0.5%	0.6%
β	0.105	0.296	0.194	0.527	0.134	0.105	0.095
t	3.798	3.083	2.721	4.391	2.55	1.301	1.868
Sig.	***	**	**	***	*	ns.	ns.

Note. A summary of 21 separate regression analyses in which value consensus was predicted with fragmentation of media use in the total samples and in the six age-education groups in 2001-2015. The definitions of the six groups: B = basic education or less; S = secondary education or more; 20: 15-29 yrs.; 40: 30-49 yrs; 60: 50-75 yrs.

*$p < .05$. **$p < .01$. ***$p < .001$.

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In 2001, the results for the overall sample and age-education groups S20 and B60 were significant. The fragmentation of media use explained 4.3% of the variance of value consensus in the former and 2.4% for the latter, but in the overall sample the proportion of explained variance was marginal (0.5%). In 2005 only one prediction was significant. The fragmentation of media use explained 37.2% of the variance in value consensus in the B40 group. In 2015, all the predictions in the age-education groups below 50 years old as well for the overall sample were significant, and the highest proportion of the explained variance of value consensus was for the B40 group (26.3%). The B20 group was the second (7.8%), and the S20 group came third (3.2%). In the rest of the age-education groups and in the overall sample the proportion varied from 0.5% to 1.5%.

Support for H6 and H7: Value Consensus and the Fragmentation of Media Use?

Our analyses support hypotheses H6 and H7. Value consensus increases as long as economic growth continues i.e. in the present data set until 2005, but stagnates thereafter. In the same year, fragmentation of media use predicts the variance in value consensus, and the prediction is highest in the groups (B20; B40) in which the largest changes in values occurs (see Figure 6 and Table 4, The 3rd era), as we hypothesized, it is plausible that changes in value consensus in Finland are linked to the increasing fragmentation of media use rather than to stable democratization. In 2001 the impact of the fragmentation of media use on value consensus was small, but in 2005 when the individual level digitalization reached 70% (see Table 1), the impact was considerable in B40. In 2015 the individual-level digitalization exceeded 90%, and the fragmentation of media use predicted value consensus significantly in all groups under the age of 50 years i.e. among the most active users of social media. Thus, the results suggest that in 2015 the news agendas of age-education groups differ more from each other than they did in 2001.

Discussion

The present study was carried out in the frame of the Schwartz's (1992) individual-level value theory with national samples in Finland in 1991-2015. The research period consists of several kinds of time-related changes in values. The most relevant of these is the shift from neoliberalism to the eve of protectionism (King, 2017; Livesey, 2017; Stiglitz, 2018). The present study concentrates on comprehensive changes in values, zeitgeist effects that are induced by global and local phenomena which push historical events along, and shift values that are most susceptible to these phenomena. In this analysis of societal change, we studied fairly stable basic human values as indicators of zeitgeist effects.

Societally Relevant Findings

1. The overall change in Finnish values is small, but on national level it is significant, consistent, and is heading toward openness to change and self-transcendence.
2. We found two 5-6/6 zeitgeist effects, but only during the first of the three eras. In the new millennium zeitgeist effects disappeared entirely, and the values of different age-education groups started to change in opposite directions.[vi]
3. The above changes seem to be linked to the increase of two societally relevant phenomena, digitalization and the fragmentation of media use, that were accompanied with the stagnation of value consensus in 2005-2015.

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4. The above societal development indicates increasing polarization of society. From this perspective the distinctions between threats and possibilities, and protection and growth values, are most relevant. Also, a recent analysis among the candidates in the Finnish municipal election in 2012 and 2017 suggests that political polarization is increasing regarding the two extremes, the populist, anti-refugee radical-right Finns Party, and the pro-refugee Green League (Lönnqvist, Ilmarinen, & Sortheix, 2020)

5. The increase in self-direction among young and well-educated people indicates that individual-level digitalization opens more or better possibilities for personal growth in 2015 than in 2005. At the same time, security became more important among the elderly and less educated people which suggests that for them digitalization represents the opposite, an increasing threat.

6. The increase in populist nationalism is a reaction to neoliberalism and globalization (López-Alves & Johnson, 2019), and gives support to the above conclusions. The anxiety is emphasized among the less-educated middle-aged respondents (B40). The societal situation motivates them to protect both their social system and their personal aspirations which suggests that this group is anxious on both value dimensions. As a manifestation of these fears, the support for the Finns Party is stronger in this group than in any other age-education group in the 2015 survey.

Methodological Conclusions

1. Value changes were measured with three methods, firstly, with the two value dimensions. Secondly, we studied the comprehensiveness of the overall change in values across social groups with a graphical analysis that is based on the two value dimensions. Thirdly, we studied value change with the mean-level changes in the ten values. The combination of the first and the second methods offer a more parsimonious but less accurate way to get an overview of value differences or changes (Verkasalo, Lönnqvist, Lipsanen, & Helkama, 2009). The mean-level changes in single values provide accurate information of the details over short periods of time, e.g. in zeitgeist analyses. However, over a longer period of time (e.g. 24 years) changes in single values were contradictory, while the two value dimensions provided more consistent information of value change. This difference is probably linked to a more general discussion on individual-level and aggregate-level analyses. What is a potentially important source of variation at the micro level is disturbing noise at the macro level (see, e.g., Katona, 1979; Harris et al., 2002).

2. Because value changes are small, and the interpretation of Cohen's *d* varies in different fields of research (Hattie, Rogers, & Swaminathan, 2014), we adjusted Cohen's *d* to better fit to analysis of value change. Also, we used $p < .05$ as the level of statistical significance. Together these two constitute our *DS* criterion that we used when we evaluated our findings. In addition, we carefully studied the tradeoffs between the opposing values. Even if they are weak, they indicate are the tradeoffs theoretically sound or not. With this combination we avoided a 63% loss of relevant information in comparison to the use of the Bonferroni adjustment that is considered too stringent in controlling chance results (Ellis, 2014).

3. Our results suggest that value changes do not always support the circumplex model hypothesis of value change (see Bardi, Lee, Hofmann-Towfigh, & Soutar, 2009). This conclusion receives support from several studies (Lönnqvist, Jasinskaja-Lahti, & Verkasalo, 2013; Myyry, Juujärvi, & Pesso; 2013; Vecchione et al., 2016). The findings of the present study suggest in such cases value changes might be linked to zeitgeist effects. This means that societal events induce value changes which can be detected as mean-level and structural changes in social groups, as long as the events are relevant enough for the respondents.

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4. In a complex society value changes might also be responses to the simultaneous impact of several events. Therefore, the time lag between subsequent time points is crucial. If the delay is long, the effects of smaller events may be overshadowed by the effects of outstanding events in the research period. The tradeoffs between opposing values are good indicators in this respect. “Incorrect tradeoffs” can be verified with an item-level analysis.

Theoretical Conclusions

1. The overall change in Finnish values is small although the 1991-2015 period was an era of remarkable societal changes. However, the value changes were consistent and reflected well what happened in society. The finding emphasizes the importance of the twofold function of values that Rokeach (1973, 1985) underlined: Values maintain continuity in society, but at the same enable societal changes.

2. Value consensus started to slow down in Finland after 1999 i.e. years before the end of the economic upswing. This finding challenges Schwartz’s and Sagie’s (2000) finding linked to value consensus and socioeconomic development. However, they studied value consensus linked to democratization, while we studied it in terms of digitalization. The latter phenomenon is more actual at present in the western world than the former one. The results of the present study suggest that changes in value consensus in Finland after 1999 are linked to the increasing digitalization rather than to stable high-level democratization. This means that value consensus might be an important indicator of values change regarding many other fields of life, e.g. the impact of democratization and digitalization on value consensus. Both emphasize expressing personal lifestyles and orientations which seem to decrease value consensus.

3. The contradiction between small value changes and major social changes is undeniable. Moreover, our results suggest that even small changes in values reflect social changes very well. Two alternatives are worth discussing in this context: Either there are small value changes occurring evenly distributed in all social groups, or value changes of different size occur in all social groups. The latter sounds more plausible, because new ideas diffuse into social groups and society gradually (Rogers, 2003). Also, several researchers (Fischer, 2017; Schwartz et al., 2017, Footnote 2; Steg, 2016) have discussed lately, based on self-perception theory (Bem, 1972), the possibility that behavioral changes precede values changes. Our recent analysis (Puohiniemi & Verkasalo, submitted) studies these phenomena on the level of social groups that adopt new behaviors linked to societal change. Our results suggest that adopting these behaviors changes people’s values into certain direction i.e. new behaviors make personal values visible (e.g. mobile technology → stimulation; waste sorting → universalism). This means that the spirit of the times might be first reflected in people’s perceptions of behavior of their fellow men that is motivated by certain values. This interpretation is in line with our definition of zeitgeist effects. When we now return to the disappearance of zeitgeist effects in the new millennium, it seems that they have not disappeared but transformed, paradoxically, into numerous zeitgeists (or opinion silos or echo chambers) each of which represents the spirit of the times to some audience in today's digitalized reality.

Limitations

The main limitation of the present study is the representativeness of the samples. During the 24 years long research period fieldwork practices have changed several times, including the increasing amount of Internet surveys. The best guarantee of the quality of the data in the present study is the use of the same research organization each time (see Endnote iii). A more specific limitation is the measurement of fragmentation of media use. There are

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several possible ways to define the degree of fragmentation. We adopted the user-centric approach (Webster & Ksiazek, 2012) that suits well to the analysis of secondary data. However, the way in which we applied it underestimates the importance of the content of an individual's media repertoire. Despite of that the results indicated that there is a relationship between values change and fragmentation of media use.

Directions for Future Research

The use of information and communication technology (ICT), in everyday life is a widely neglected topic in social psychological research on values and values change. However, there is no reason to think that the pace of technological change would slow down in the future. Therefore, it is important to include the use of ICT in social psychological studies, because it influences strongly all human interaction. Regarding studies on values change, the combination of media use and value consensus is worth studying, also. Especially, if it could be studied with longitudinal designs over a longer period of time, and including the content of an individual's media repertoire to the analysis.

Notes

i) The 1991 survey took place in the spring, and therefore the 9/11 events had no impact on it.

ii) The classification is based on the data of the present study, because no one else has provided this information from Finland for the research period.

iii) Firstly, the field work has been carried out by the same organization, Kantar TNS that is one of the largest commercial research companies in Finland. Secondly, the respondents were recruited and the samples were randomized according to the prevailing international code for marketing and social research practices set by ESOMAR (see McDonald & Vangelder, 1998). Thirdly, the data were collected with a two-step process, a combination of a personal (1991) or a telephone interview and a mail-survey. Responding via the Internet was an option in 2015. Fourthly, in each survey the first contact to the respondent was always a face-to-face or a telephone interview.

iv) GRC is designed for multidimensional scales. Its values vary between 0 and 1, and are comparable to Cronbach's αs. The difference between these two is in the assumptions. For α, they are stricter than for CRC. Therefore, α gives lower reliabilities for same scales than GRC. (Tarkkonen & Vehkalahti, 2005; Verkasalo, Lönnqvist, Lipsanen, & Helkama, 2009).

v) The decrease of universalism is based on changes in two items. Firstly, the decrease of item 'A world at peace' is a plausible response to war and peace issues. The wars in the Persian Gulf and in Yugoslavia were in progress in 1991, and both were over by the spring of 1999. The fieldwork of 1999 lasted from February to June. The NATO operation in March-June ended the war, and the beginning of the operation was a relief for many. Secondly, the decrease of item 'The protection of the environment' is a plausible sign of relief when the new nature conservation act came into force in the turn of the 1990s.

vi) To confirm our conclusion, we carried out an unpublished analysis based on the PVQ21 data of the European Social Survey so that it covered the global finance crisis (2008-2012), a possible source of zeitgeist effects. By using the similar design and criteria we did not find zeitgeist effects in that analysis (see also Sortheix, Parker, Lechner, & Schwartz, 2019) which supports our conclusion that no zeitgeist effects occurred among Finns in the new millennium.

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Competing Interests

The authors have declared that no competing interests exist.

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Data Availability

When the research project is finished, the research data used in this study and owned by Limor Oy will be archived at the Finnish Social Science Data Archive. From the research data owned by Kantar TNS, those parts will be archived which are permitted to be used for scientific purposes according to international agreements with third parties.

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Appendix

Table A.1

The Raw (R) and Weighted (W) Samples of the Study by Sex, Age, and Education in 1991, 1999, 2001, 2005 and 2015

Year		1991		1999		2001		2005		2015		Total	
Raw / Weighted		(R)	(W)	(R)	(W)	(R)	(W)	(R)	(W)	(R)	(W)	(R)	(W)
Sex													
No answer	*n*	0	0	0	0	0	0	0	0	4	4	4	4
	%	0	0	0	0	0	0	0	0	0	0	0	0
Women	*n*	978	939	611	681	747	701	697	651	697	672	3730	3644
	%	53	51	51	52	53	50	54	50	52	51	53	51
Men	*n*	867	906	593	627	655	699	596	644	649	648	3360	3524
	%	47	49	49	48	47	50	46	50	48	49	47	49
Total	*N*	1845	1845	1204	1308	1402	1400	1293	1295	1350	1324	7094	7172
	%	100	100	100	100	100	100	100	100	100	100	100	100
Age													
No answer	*n*	0	0	0	0	0	0	0	0	0	0	0	0
	%	0	0	0	0	0	0	0	0	0	0	0	0
15 - 29 yrs	*n*	631	491	324	310	326	336	291	322	254	296	1826	1755
	%	34	27	27	24	23	24	23	25	19	22	26	25
30 - 49 yrs	*n*	724	753	459	536	548	526	437	449	407	429	2575	2693
	%	39	41	38	41	39	38	34	35	30	32	36	38
50 - 75 yrs	*n*	481	592	419	461	528	538	563	522	690	599	2681	2712
	%	26	32	35	35	38	38	44	40	51	45	38	38
Total	*N*	1836	1836	1202	1307	1402	1400	1291	1293	1351	1324	7082	7160
	%	100	100	100	100	100	100	100	100	100	100	100	100
Education													
No answer	*n*	6	6	0	0	13	13	15	15	0	0	34	34
	%	0	0	0	0	1	1	1	1	0	0	0	0
Basic education or less	*n*	602	850	401	486	408	502	308	417	190	319	1909	2574
	%	33	46	33	37	29	36	24	32	15	25	27	36
Secondary or lowest tertiary	*n*	1094	832	652	635	722	710	688	667	624	687	3780	3531
	%	59	45	54	49	51	51	53	52	48	54	54	50
Lower tertiary or more	*n*	143	157	146	183	259	175	282	196	483	266	1313	977
	%	8	9	12	14	18	13	22	15	37	21	19	14
Total	*N*	1845	1845	1199	1304	1402	1400	1293	1295	1297	1272	7036	7116
	%	100	100	100	100	100	100	100	100	100	100	100	100

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